

Allotment Assessment Brackett Bench

I. Name and Number of Allotment

Brackett Bench Allotment #01008

Permittees: Cedar Creek Cattle Company

II. Livestock Use

1. Preference: 2386 AUMs
2. Historic Use Range: 806 to 3232 AUMs
3. Suspended Preference: 0 AUMs
4. Season of Use: 6/01 to 7/31, 11/01 to 11/30
(TNR authorizations included grazing use through February 28)
5. Kind and Class of Livestock: 1000 cattle
6. Percent Public Land: 100%

III. Allotment Profile

1. The Brackett Bench Allotment is located in the southeast part of the Jarbidge Field Office Area. The majority of this allotment (90%) is located in MUA-15, but approximately 2130 acres at the north end lie within MUA-13. There are seven pastures in this allotment (1-Antelope, 2-Chain Field, 3-Rock House, 4-Kaster Seeding, 5-Browns Seeding, 6-Jim Lee, and 7-Barber Spring). The current permit was issued on September 1, 1999 authorizing 2386 AUMs. This permit is valid until February 28, 2005.
2. Federal Acreage: 20,594
3. MUA Objectives (Jarbidge RMP, 1987):
 - Issue 20,169 AUMs forage for livestock in MUA-13 and 26,466 AUMs in MUA-15 by the year 2005 (II-50, II-56); Brackett Bench is 9% of MUA 15 and 2% of MUA 13. This increased use would result from the availability of additional forage from water developments, brush control and seeding projects and improvement in native range condition (II-3).
 - Maintain 47,510 and 24,159 acres of existing vegetative improvements (II-50, II-56).
 - Improve lands in poor ecological condition (II-50, II-56).
 - Manage big game habitat in MUA-13 to support 175 mule deer (40% increase) and 50 antelope (100% increase) (II-50); manage big game habitat in MUA-15 to support 2400 mule deer in winter (100% increase), 1285 mule deer the rest of the year (29% increase), 1170 antelope (30% increase), and 56 bighorn sheep (up from 2); and protect crucial winter big game habitat (II-56). Note: The objective for bighorn sheep applies to the Jarbidge River Canyon which is over 30 miles from this allotment.
 - Improve 4900 acres of big game habitat by 2005 in MUA-15 (II-56).

- Maintain present areas of sage grouse nesting habitat in MUA-13 (II-50).
 - Maintain current condition of riparian habitat and fisheries habitat in MUA-13 (II-50) and in MUA-15 improve 4.7 miles of fisheries habitat and 9.6 miles of riparian habitat by 2005 (II-56).
4. Key Forage Species:
- Crested wheatgrass
 - Bottlebrush squirreltail
 - Bluebunch wheatgrass
 - Idaho Fescue
5. Grazing System: The grazing use in this Allotment is outlined in the Livestock Management Plan, Tews Land and Livestock. The Allotment is scheduled for deferred rotation grazing schedule in the spring, summer, fall and winter (March through February) in conjunction with other allotments which the permittees have permitted use. The pastures are rotated in a deferred rotation manner so as not to graze cattle during the critical growth period of key species for two consecutive years.

IV. Management Evaluation

The purpose of this evaluation is to determine the allotments status in meeting the Standards for Rangeland Health and Guidelines for Livestock Management and to renew the grazing permit with management guidelines to meet these Standards.

A. Summary of Studies Data

1. Actual Use

Table 1 shows the actual use since from 1990 to 2002.

Table 1 - Actual Use	
Grazing Season	AUMs
1990	1241
1991	1241
1992	1361
1993	1765
1994	2285
1995	806
1996	3232
1997	2525
1998	2475
1999	1091
2000	2184
2001	1581
2002	1071

2. Climate

Long term water year precipitation (September through June) for Hollister NOAA Weather Station is 9.62 inches and the 10-year average annual water year precipitation for the BLM rain gauge stations at **Cedar Mesa** is 11.5 inches and **Monument Springs** is 26.6 inches. The Cedar Mesa station, at 4,700 feet, best represents the lower elevations and northern areas of the allotment while the Monument Spring station, at 7,150 feet, represents the higher elevations and the southern areas. The middle elevations of the allotment are presumed to have annual moisture averages somewhere in between the averages of these two stations or about 15 to 18 inches. Table 2 shows the yearly precipitation accumulations for the past nine water years at each of the stations. Also shown is the Yield Index for the Castleford Weather Station. The Yield Index is a precipitation-yield relation which provides reliable and effective information for use in comparing annual production yields to what is expected in a normal year. The Yield Index is used in forecasting and adjusting range forage estimates.

**Table 2 - Water Year Precipitation
and Yield Index**

Year	Cedar Mesa (in inches)	Monument Spring (in inches)	Yield Index At Hollister
1993	4.5^	6.1^	1.55
1994	9.4	22.5	0.72
1995	16.4*	33.2*	1.94
1996	11.5	21.7	1.28
1997	16.2*	27.7*	1.41
1998	16.3*	34.3*	1.72
1999	10.3	24.7	1.05
2000	7.0	25.8	0.49
2001	8.2	25.8	0.52
2002	9.9	25.3	0.88
2003	9.6	24.5	0.75

^ Incomplete. Only 3rd and 4th quarters totals.

*Above Average Precipitation.

3. Utilization

Table 3 shows the actual data from sampling at transects in the Allotment.

Table 3 - Utilization Data

Year	Vegetation Community	Utilization Range	Utilization Average
2001	Native	8-64%	35%
2003	Crested seeding	7-30%	21%
2003	Native	5-16%	8%

4. Production

No production data is available for this allotment.

5. Condition and Trend

In June 1988, 12 long-term vegetation/soil cover monitoring study sites were established in the Brackett Bench allotment in cooperation with the permittee. In accordance with the Minimum Monitoring Standards for BLM Rangelands in Idaho, the study methods initiated included nested plot frequency, percent ground cover, shrub density, and 3X3 plot data and site photographs. Throughout the eight pastures of this allotment, ten of the study sites are widely scattered along a 12 mile stretch of the Browns Bench shelf in either native shrub communities or established seedings, and two sites are located in the higher elevations west of the Bench in native sagebrush areas. The 12 sites are situated in the following locations (site #), range sites, and elevations:

14S14E11; Artrw/Agsp, Loamy 10-13", now a seeding @ 5,130 feet,
 14S14E13; Arar8/Agsp, Shallow Stony Loam 8-12", now a seeding @ 5,130 feet,
 14S14E13A; Arar8/Agsp, Shallow Stony Loam 8-12", now a seeding @ 5,130 feet,
 15S14E01; Ararn/Stth2, Very Shallow Loam 8-12", native @ 5,290 feet,
 15S14E13; Arar8/Agsp, Shallow Stony Loam 8-12", now a seeding @ 5,170 feet,
 15S14E13A; Arar8/Agsp, Shallow Stony Loam 8-12", native @ 5,170 feet,
 15S14E21; Artrv/Feid, Loamy 16+", native @ 6,820 feet,
 15S14E26; Artrw/Stth2, Loamy 10-13", now a seeding @ 5,320 feet,
 15S14E27; Artrw/Stth2, Loamy 10-13", now a seeding @ 5,300 feet,
 15S14E28; Artrv/Feid, Loamy 16+", native @ 6,990 feet,
 15S15E06; Ararn/Stth2, Very Shallow Loam 8-12", native @ 5,100 feet, and
 15S15E06A; Artrw/Stth2, Loamy 8-10", native @ 5,100 feet.

Since the baseline data was collected in 1988, all 12 study sites have been revisited and data gathered at least once, in either 1996 or 1997. Trend is determined by comparing the frequency of key species and cover of the first year to subsequent years. The analysis and evaluation of these long-term studies are summarized in Table 4a and 4b.

Table 4a - Condition and Trend Evaluation of Native Vegetation Study Sites

1981-83 Inventory Site	Inventory Site Location	Trend Site	Vegetation Types	Trend Site Ecological Rating*	Trend
LH-122	15S15E07	15S14E01	Ararn/Stth2	Early	Down
LH-109		15S14E13A	Arar8/Stth2	Mid	Static
LH-117	15S14E20	15S14E21	Artrv/Feid	Late	Up
LH-109	15S14E20	15S14E28	Artrv/ Feid	Mid	Static
LH-122	15S15E07	15S15E06	Ararn/Stth2	Early	Down
		15S15E06A	Artrw/Stth2	Early	Static
LH-136	16S14E30		Arar8/Feid	PNC**	

**Based on 1981-82 Range Inventory

Table 4b – Condition and Trend Evaluation of Seeding Study Sites

Trend Site	Vegetation Types	Trend Site Condition Rating*	Trend
14S14E11	Agcr Seeding	Good	Up
14S14E13	Agcr Seeding	Fair	Static
14S14E13A	Agcr Seeding	Poor	Static
15S14E13	Agcr Seeding	Fair	Static
15S14E26	Agcr Seeding	Fair	Static
15S14E27	Agcr Seeding	Fair	Static

* Condition was determined from native vegetation inventories in 1982 or best estimate for seedings based on relative frequency levels of seeded species and shrub densities. Jarbidge RMP referred to Range Condition as: Excellent, Good, Fair, and Poor. Since that time these terms have been related to; Potential Natural Community, Late Seral, Mid Seral, and Early Seral, respectively. Value terms of excellent, good, fair, poor are only used as a value rating for areas rehabilitated with *Agropyron cristatum* and *Agropyron intermedium*.

Trend site summary reports have been completed for all of the study sites evaluated. These analyses are on file in the field office Allotment Study files and suggest required livestock management recommendations and specific site objectives for maintaining or improving the vegetation conditions for each area or pastures. These reports can be reviewed upon request.

In conclusion, only one of the six native vegetation study sites monitored in the Brackett Bench allotment site was potentially meeting the RMP objective of improving a fair condition rangeland. This particular Mountain sagebrush and Idaho fescue plant community site is indicating a positive “static to upward” trend. The five other native sites are not meeting the RMP objective to improve lands in poor (early seral) or fair (mid-seral) ecological condition. The RMP states that rangelands in poor (early seral) condition are to be managed for improvement (improve one condition class) as an objective to all multiple use areas. The RMP further states that fair condition lands need to improve to good (late seral) condition for sage grouse and other wildlife. For the most part, the native vegetative trends do not suggest or support overall improvement of most

native range conditions in the allotment. Some native rangelands show slight changes, but are static to down overall. None had clear upward trends.

As indicated by the table above, all six seeding study sites were rated satisfactory with most sites being in fair condition and trend static and one site in poor condition and trend static. Only one site, in satisfactory/good condition, has been determined to be in static to upward trend, and this is the reason for the “good” condition rating. Good, fair or poor condition ratings of these seedings are based on shrub re-invasion densities (low to high) and seeded grass species frequencies (low to high). Overall, most seedings in the Brackett Bench allotment are being sustained in satisfactory (fair to good) condition as seedings and meeting the RMP objective of maintaining existing vegetative improvements.

Note that all trend data collection and studies have been performed over an extensive time period (9 to 10 years) and throughout drought, average, and above average precipitation years.

B. Rangeland Health Assessment

In 2002, rangeland health data was gathered on the Allotment at eight ecological sites within native range, and four ranges site within seedings. Rangeland health data was collected per Technical Reference 1734-6, *Interpreting Indicators of Rangeland Health*. The rangeland health data was collected by an interdisciplinary team for the purposes of making a quantitative assessment of the soil/site stability, hydrologic function, and the integrity of the biotic community for the various ecological sites.

Twelve transects were read at various ecological sites and are identified as BB-1 to BB-12R. The “Preponderance of Evidence” based on the 12 transects, is shown in Table 5. The degree of departure or deviation from the potential ecological site description (None to Slight, Slight to Moderate, Moderate, Moderate to Extreme, or Extreme) is made based on an evaluation of the data. Transect BB-22R was taken in a reference site.

Table 5 - Preponderance of Evidence

Brackett Bench Allotment 1008

Attribute (The sites are considered meeting attributes if not mentioned)		Deviation From Potential				
		Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
Soil Site Stability Rationale: Bareground is higher than expected (BB-4, 3, 2, 1). Soil surface pedon dissolves in water readily (BB-8, 4, 3, 2, 1). Some soil loss, but it is not current (BB-5).	<i>Native</i>				BB-2, BB-3	BB-4, BB-5, BB-9, BB-10, BB-11, BB-12R
	<i>Seedings</i>				BB-1	BB-6, BB-7, BB-8
Biotic Integrity Rationale: Cheatgrass and bur buttercup sparse but locally abundant (BB-7, 5, 4). Bur buttercup, Russian thistle and Halogeton scattered in plant community (BB-2). Diffuse knapweed and field bindweed were observed in 3 pastures. Cheatgrass common in plant communities (BB-9, 3). Shrubs in low composition from wildfire (BB-9, 7). Low composition of bluebunch wheatgrass (BB-3, 2). Forbs low in composition as is N fixing legumes (BB-7, 4, 1). Low production because of low composition of bluebunch wheatgrass (BB-5, 2). Production at 50 to 75 percent (BB-4, 3, 1). Production is 25 to 50 % of potential (BB-2). Plants show low vigor as compared to surrounding sites (BB-2).	<i>Native</i>				BB-2, BB-3, BB-4	BB-5, BB-9, BB-10, BB-11, BB-12R
	<i>Seedings</i>				BB-1	BB-6, BB-7, BB-8
Hydrologic Function Rationale: Litter on ground is low in cover (BB-8, 7, 4, 3, 2). Bare ground allows moist loss to evaporation and runoff which reduces infiltration (BB-3, 2, 1)	<i>Native</i>				BB-2, BB-3	BB-4, BB-5, BB-9, BB-10, BB-11, BB-12R
	<i>Seedling</i>				BB-1	BB-6, BB-7, BB-8

1. Standard 1 – Watershed

Nearly all of the sites assessed were noted to be within none to slight deviation from expected. This means that flow patterns were few with slight deposition and that surface litter was in place. There was little evidence of plant pedestaling due to water or wind erosion. There was minimal soil crusting and no evidence of a compaction layer. There was some evidence of hoof prints, but deep hoof prints were uncommon. Rills and gullies

were not noted. The only exceptions noted were at sites #2, #3 (native sites) and #1 (seeding) which were slight to moderately deviated from the expected.

2. Standard 2 - Riparian Zones and Wetlands and Standard 3 - Stream Channel/Floodplain

The following principal stream reaches (Table 6) were present in the Brackett Bench Allotment.

Table 6 - Stream Reach Functionality Rating

Stream (year inventoried/ monitored)	Inventory Reach #	Miles	Dominant Vegetation	Functionality Rating*	Comments
Corral Creek 1998, 2002, 2003	.4 - 1.1	0.7	Rush/Poa/ Rose/CHRY/ ArtrW	PFC	creek is fenced off at boundary w/private land
Browns Creek 1999, 2002, 2003	1.4 – 3.1	1.7	Rush/Sagebrush	FAR	perennial water not present in this stretch
Browns Creek 1999, 2002, 2003	3.1 – 4.2	1.1	Poa/Rush/Rose /Willow/Aspen	FAR	banks dominated by woody vegetation; very heavy livestock use throughout
China Creek 1999, 2002, 2003	4.5 – 4.7	0.2	Willow/Rose/ Poa/Artrw	PFC	fish-bearing below waterfall; considerable livestock use along creek
China Creek 1999, 2002, 2003	4.7 – 5.0	0.3	Willow/Poa	FAR	reach is influenced by livestock
China Creek 1999, 2002, 2003	5.0 – 5.2 (mainstem & spring)	0.4	Willow/Aspen	PFC	livestock influences continue up this reach
Antelope Springs Creek 1998, 2002, 2003	1.4 – 2.7	1.3	Baltic rush/ Poa/Yarrow	FAR	most of the water from the springs is diverted into a ditch/pipeline

* PFC – Proper Functioning Condition
FAR -Functioning at Risk
NF – Non-functioning

The mouth of Corral Creek is fenced off near the BLM/private land boundary. Although there was evidence of past grazing use within this riparian zone, this stretch has not been grazed by livestock in the last few years. Predominant vegetation is Baltic rush, Kentucky bluegrass, and rose. Rabbitbrush and Wyoming sagebrush are present along this reach to the stream's edge. Nebraska sedge and swordleaf rush are present in considerable amounts within the stream channel and exhibit good vigor. Panicked bulrush (*Scirpus microcarpus*) is also present in lesser amounts. Streambanks are well-covered by herbaceous vegetation, and are largely intact and in good condition. There is a lightly-used trail along this stream that appears to be most often used by hunters. The likelihood of sediment from this trail reaching the stream channel is low.

The upper portion of Browns Creek (approximately mile 3.2 to 4.2) flows year long. At some point beyond mile 3.2, the water subs into the ground. Perennial water does not flow in the lower portion of Browns Creek below segment 2.1. The 2001 North Can fire burned through the midsection of Browns Creek in T15S, R14E, section 33.

Predominant vegetation along the upper portion of Browns Creek is Kentucky bluegrass, Baltic rush, rose, aspen, and willow. The upper portion of this creek has been heavily used during the hot season by livestock. In spite of the mature woody vegetation along much of this creek, livestock trailing and associated use (loafing, shading, grazing) is evident along the entire reach. The majority of the stream banks and many areas of the floodplain are trampled to bare soil. There is a high amount of fines in the stream. Where herbaceous vegetation is present, stubble heights are shorter than what is needed to dissipate forthcoming spring flows or to capture fines during the next year's run-off. Many young willows and aspen have been hedged/rubbed to the point that they are no longer vital. Some portions of this reach are entrenched and others are shallow and wide. Some heavily grazed Nebraska sedge is present in isolated spots along the upper portion of Browns Creek. Otherwise, no other herbaceous obligate wetland species are present. The upper portion of Browns Creek canyon is very narrow and adjacent uplands are steep (greater than 30% slope). The topography of this stretch of Browns Creek does not make it suitable for livestock use.

The lower portion of Browns Creek is predominantly Baltic rush, cheatgrass, Kentucky bluegrass, and Wyoming sagebrush. Small amounts of Nebraska sedge are present in very isolated pockets, with a grazed stubble height of approximately four inches observed at the end of this year's grazing use. Stubble height on Baltic rush is higher, approximately seven to eight inches. Most use appears to be made when this part of the creek is dry. Stream banks are relatively intact.

Predominant vegetation along China Creek is willow, rose, aspen, with Wyoming sagebrush within the riparian zone. Fish are present in the creek below the waterfall. This portion of China Creek (4.5 to 5.2) has been heavily used by livestock. Young willows have been hedged. Although there is a good wood component along this creek, cattle have been able to access most of the creek. Many stream banks are trampled and much of the stream bed is shallow and wide. In some spots, the stream channel is incised. In spite of the high level of livestock use, gravel substrates within the creek were relatively

clean of fines. Water cress (*Nasturtium* sp.) is present along most of this creek. Where present, *Carex* species have been suppressed by grazing and have not produced seedheads. Grazing use is apparently limiting the opportunity for the water table to increase and the riparian zone to widen. A higher than expected amount of herbaceous facultative upland species were observed within the riparian zone.

Antelope Springs originates on BLM land. Nearly all the water from this spring was diverted into a ditch and eventually a pipeline under an 1892 water right to irrigate hay fields and to water livestock on the Antelope Springs Allotment. The final decree on this spring has not yet been issued, but BLM could receive up to nine gallons/minute depending upon the final decree. At this time, water from the ditch seeps into the nearby natural stream channel, but there is no flow to speak of. When the riparian assessment was conducted in 1998, water was still flowing into the natural stream channel, and at that time it was rated functional-at risk. Swordleaf rush, Nebraska, beaked, and wooly sedge were present at that time. Some Nebraska sedge, without seedheads, is still currently present; swordleaf rush, beaked, and wooly sedge are not present. Young Wyoming sage plants are growing in the channel along with poverty weed and tumbled mustard.

Whiskey Slough creek is an ephemeral stream and has not been evaluated for functionality. There is a small reservoir along Whiskey Slough on private land, upstream from the BLM-portion of the creek. Primary vegetation is Baltic rush, rose, and Wyoming sagebrush, with cheatgrass present on the floodplain in isolated spots. Stubble height of Baltic rush at the end of this year's grazing use was approximately six inches.

3. Standard 4 - Native Plant Communities

Native vegetation was evaluated at nine sites. Three plots (BB-2, BB-3, and BB-4) were placed in a loamy 8-12 range site, three plots (BB-5, BB-6, and BB-10) were located in a shallow stony range site, and one site each in loamy 13-16 (BB-9), mountain ridge 14-18 (BB-11), and loamy 16+ (BB-12) range sites.

In the loamy 8-12 inch range site sagebrush cover varied from 18 to 32 percent. Average sagebrush height varied from 12.9 inches at BB-4 to 23.2 inches at BB-3. Sandberg bluegrass was the most abundant grass at all three sites (BB-2 20 percent, BB-3 20 percent, and BB-4 21 percent). Bluebunch wheatgrass, one of the late seral grasses that should have dominated the range site, was not recorded at BB-3 and BB-4, and provided only 2 percent cover at BB-2. Average grass heights varied from 4.5 inches up to 10.6 inches. The later site had not been grazed at the time grass heights were recorded. Bare ground 24-40 percent cover in these range sites, with 1-5 percent biological soil crusts present. A concern was the amount of exotic annuals present in this range site. Bur buttercup, halogeton, Russian thistle and cheatgrass in these lower elevation (<5,300 feet) contributed 5-10 percent cover. These exotic species were quite wide spread and locally abundant.

In the shallow stony 8-12 range site sagebrush provided 19 to 35 percent cover. The average sagebrush height ranged from 13.2 inches at BB-6 up to 15.6 inches at BB-5.

The relatively low shrub heights were due to black sagebrush being the dominant species. At site 5, rabbitbrush was high (7 percent). Sandberg bluegrass was the most abundant grass at each site (BB-5 34 percent, BB-6 49 percent, and BB-10 27 percent). Bluebunch wheatgrass and Thurber needlegrass should have been the dominant late seral species on this range site. Neither species were recorded at BB-5. BB-10 contained only two percent cover of Thurber needlegrass, whereas BB-6 had 7 percent cover of Thurber needlegrass and 15 percent cover of bluebunch wheatgrass. Average grass heights ranged from 6.2 inches (grazed) to 10.9 inches (rested pasture). Forbs were 3 percent (BB-5), 10 percent (BB-6) and 5 percent (BB-10) cover. The most common forbs were lupine and phlox. Bare ground varied from a high of 13 percent (BB-10) to 4 percent (BB-6). Cover of exotic annuals was 7 percent (BB-5), 8 percent (BB-6), and 2 percent (BB-10), respectively. Cheatgrass was the most abundant of the exotic annuals.

The loamy 13-16 site burned in a fire in 2001. This site lacked sagebrush, but contained 93 percent cover of perennial grasses (Sandberg bluegrass – 55 percent, bluebunch wheatgrass – 23 percent, and bottlebrush squirreltail – 15 percent). The forb community had 28 percent cover, primarily lupine. Of concern was the relatively high amount of cover (45 percent) of exotic annuals, primarily cheatgrass.

The mountain ridge 14-18 range site supported primarily low sagebrush (22 percent shrub cover). Sagebrush height (17.2”) was influenced because of the short stature of this shrub species. The most abundant grass on this range site was Idaho fescue (30 percent), with bluebunch wheatgrass (4 percent), bottlebrush squirreltail (2 percent), *Stipa* (2 percent), and Sandberg bluegrass (10 percent). Average grass height was 6.5 inches. The forb community at this site was very diverse and abundant, 38 percent cover of perennial forbs, with lupine being the most abundant. Bare ground was 6 percent, and there was 1 percent biological soil crust cover. There was 1 percent cover of cheatgrass.

The loamy 16+ had 26 percent cover of mountain big sagebrush cover with an average height of 23.1 inches. Idaho fescue (39 percent) was the most abundant grass, followed by bluebunch wheatgrass (10 percent) and Sandberg bluegrass (3 percent). Average grass height was 7.3 inches. The forb component was quite varied and abundant (26 percent cover). Bare ground was a little high (9 percent) for the site. No exotic annuals were recorded.

Diffuse knapweed and field bindweed, both noxious weeds, were also present in a few locations (near BB-3, BB-4, BB-6) primarily along roads. Knapweed was a threat to expand into native communities. The majority of the native sites had adequate sagebrush cover, although at 3 sites it was higher (29 – 32 percent) than preferred for sage grouse nesting. These areas were on crucial big game winter range. Shrub height average 19 inches. In low sagebrush/black sagebrush habitats shrub height averaged 2 inches less, but was considered adequate for sage grouse using these communities. The low frequency of late seral and mid grasses (Bluebunch wheatgrass, Thurber needlegrass, and squirreltail) reduces the quality of nesting cover at low elevation sites. The forb component was sparse in some areas, but was believed to meet wildlife needs. The most abundant forbs were in the *Phlox* genus as well as a number of lower growing species

such as woolypod milkvetch, crag aster, and rayless fleabane. The higher elevation (> 6,000 feet) sites had greater grass height, cover, and forb component.

A number of wildlife species rely on sagebrush for winter food (mule deer, pronghorn, sage grouse, black-tailed jackrabbit), substrate for nesting (Brewer's sparrow, sage sparrow, sage thrasher, loggerhead shrike, vesper sparrow) or cover (least chipmunk, sagebrush vole). Sagebrush also provides security cover for fawning antelope and mule deer. A variety of wildlife species were found in the allotment including mule deer, pronghorn, coyote, badger, various small mammals and birds. Several wildlife species that occur in the allotment were presently on the Idaho BLM's sensitive species and "monitor" lists (Table 7). Species in the monitor category do **not** receive any additional consideration like sensitive species. Much of the allotment was designated as crucial winter range for antelope as well as mule deer winter range. Past wild fires have resulted in a reduction of shrub cover on several hundred acres of crucial winter range. Native plant communities with mountain mahogany and aspen overstories were not evaluated. These areas were very important to mule deer and other wildlife. When aspen was associated with springs or seeps, there was typically a high amount of use in the understory (China Creek, Browns Creek).

No data were collected in mountain shrub, aspen stands or mountain mahogany stands. Aspen stands are important to a number of sensitive species and provide important habitat for mule deer fawns. Mountain mahogany provides important winter range for mule deer and habitat for some sensitive species. Mountain shrub habitats contain serviceberry, chokecherry and bitterbrush, all important browse species for mule deer and other wildlife. Both plant communities were present at higher elevations (> 6000 feet).

4. Standard 5 - Seedings

Three transects were located in seedings, two sites in the loamy 13-16 range site (BB-7 and BB-8) and one in a loamy 8-12 range site (BB-1). Generally the sagebrush component in the seedings was somewhat limited (7 to 13 percent cover) in the seedings evaluated. Crested wheatgrass accounted for 35 percent cover at BB-1, 62 percent at BB-7 and 41 percent at BB-8. Mid and late seral grasses (Thurber needlegrass, bottlebrush squirreltail, and bluebunch wheatgrass) were uncommon or lacking in the seedings. Sandberg bluegrass was abundant in the seeding providing 35 percent, 64 percent, and 35 percent cover, respectively, for sites BB-1, BB-7 and BB-8. Overall forb diversity and abundance was generally low with the dominant forbs present including lupine (BB-8) and *Iva axillaris* (BB-7). Diffuse knapweed and field bindweed were present in a few locations, primarily along roads. Knapweed was present at low levels in one seeding (near BB-1) and may expand.

5. Standard 6 – Exotic Plant Communities, Other Than Seedings

Not applicable.

6. Standard 7 - Water Quality

The three main perennial surface waters associated with the Brackett Bench allotment include upper China Creek, Salmon Falls Creek and Salmon Falls Reservoir. Of these

major water bodies, the Idaho Department of Environmental Quality (DEQ) had nominated this segment of Salmon Falls Creek and reservoir (entire eastern boundary of the allotment) from the Nevada state line to the dam as “water quality limited” and was included on the 1996-98 303(d) lists (and will remain on the 2002 list) in Hydrologic Unit Code (HUC) #17040213 for concerns of **nutrients** and **thermal**, however severity of these concerns was rated as low. Neither the reservoir nor the two mile segment of Salmon Falls Creek below the dam have been water quality monitored by the BLM.

Although China Creek is not listed as water quality limited by DEQ, the BLM has been water quality monitoring the upper one mile stretch of this creek for the past five years. Data summaries for each year (1998-2002) of the water quality sampling for temperatures and chemical attributes for this portion of the creek can be found in **Appendix I**.

A brief water quality summary discussion of China Creek concludes that the upper segment appears to be meeting the temperature standard and other criteria for a cold water biota stream. The main reasons for meeting cold water biota standards are attributed to the stream being directly fed by several nearby springs and the water course being very well covered with willow canopy along its entire upper stretch. No other water quality problems have been detected in this stream by the BLM. China Creek was assessed by DEQ in 2002 and was found to have failed to meet the cold water biota beneficial use standards. As a result, DEQ has added this creek to the 2002 303(d) list and will be reassessed for Idaho’s 2004 303(d) list.

There are two other important and semi-perennial (ephemeral) creeks in the allotment that seasonally provide water to livestock, mostly during the spring and early summer periods. They are Browns Creek and Corral Creek. Both creeks are spring fed in the higher elevations of the allotment and flow volumes of about a cubic foot per second (cfs) or less annually early in the year, however by July flows taper off to trickles or completely dry up. Although these creeks are important early season water sources in the allotment, their ephemeral nature precludes them from making DEQ’s 303(d) list. Also, the BLM has not monitored these creeks for this same reason and therefore water quality is unknown.

Additionally, there are a few other open waters within the allotment consisting of small springs and ponds. The quality of these waters has not been monitored by the BLM. Most of the water for livestock use is currently distributed throughout much of the central and northern areas of the allotment by means of pipelines and troughs. The source for this one main pipeline system comes from a spring on private land. The quality of this water was not monitored by the BLM because of the private land origin, but is assumed to be of high quality since it comes directly from a protected and enclosed source.

7. Standard 8 - Threatened and Endangered Plants and Animals

A number of species presently designated as Sensitive species are present in the allotment. For the most part, the allotment has not been inventoried for sensitive species. Sensitive species occurrences are frequently noted from incidental observations. Also a number of wildlife species presently designated as “watch” are also present. Watch

species were **not** presently designated as Sensitive species, but may be added to the sensitive list in future years. One sensitive BLM plant species is known to occur, also. Only limited surveys for sensitive plants have been conducted in this allotment and more species may occur. It appears that the standard is being met for the special status plant species known from the allotment. Impacts from livestock have either been described as “slight”, or they have not been reported or observed at some of the plant locations. All these species were shown in Table 7.

Table 7 - Idaho BLM Sensitive and Watch Species in the Brackett Bench Allotment

Common Name	Scientific Name	Status	Presence
Greater sage grouse	<i>Centrocercus urophasianus</i>	S	C
Columbian sharp-tailed grouse	<i>Tympanuchus phasianellus columbianus</i>	S	C
Mountain quail	<i>Oreotyx pictus</i>	S	H
Prairie falcon	<i>Falco mexicanus</i>	S	C
Peregrine falcon	<i>Falco peregrinus anatum</i>	S	C
Ferruginous hawk	<i>Buteo regalis</i>	S	C
Loggerhead shrike	<i>Lanius ludovicianus</i>	S	C
Brewer's sparrow	<i>Spizella breweri</i>	S	C
Sage sparrow	<i>Amphispiza belli</i>	S	C
Spotted bat	<i>Euderma maculatum</i>	S	C
Townsend big-eared bat	<i>Corynorhinus townsendii</i>	S	C
Calliope hummingbird	<i>Stellula calliope</i>	S	C
Redband trout	<i>Oncorhynchus mykiss gairdneri</i>	S	C
Northern leopard frog	<i>Rana pipiens</i>	S	H
Columbia spotted frog	<i>Rana luteiventris</i>	C	L
Lewis woodpecker	<i>Melanerpes lewis</i>	S	C
Swainson's hawk	<i>Buteo swainsoni</i>	W	C
Wilson phalarope	<i>Phalaropus tricolor</i>	W	C
Short-eared owl	<i>Asio flammeus</i>	W	C
Sage thrasher	<i>Oreoscoptes montanus</i>	W	C
Green-tailed towhee	<i>Pipilo chlorurus</i>	W	C
Brewer's blackbird	<i>Euphagus cyanocephalus</i>	W	C
Western burrowing owl	<i>Speotyto cunicularia</i>	W	C
Red-naped sapsucker	<i>Sphyrapicus nuchalis</i>	W	C
Pinyon jay	<i>Gymnorinus cyanocephalus</i>	W	C
Western pipistrelle	<i>Pipistrellus hesperus</i>	W	C
Western small-footed myotis	<i>Myotis ciliolabrum</i>	W	C
Yuma myotis	<i>Myotis yumanensis</i>	W	L
Grasshopper sparrow	<i>Ammodramus savannarum</i>	W	L
Virginia's warbler	<i>Vermivora virginiae</i>	W	L
Cordilleran flycatcher	<i>Empidonax occidentalis</i>	W	L
Short-eared owl	<i>Asio otus</i>	W	L
Simpson's hedgehog cactus	<i>Pediocactus simpsonii</i>	S	C
Slickspot peppergrass	<i>Lepidium papilliferum</i>	C	L
Status codes: S = designated Sensitive species; C = FWS candidate species; W = Watch category			
Presence codes: C = presence confirmed in allotment; L = presence likely in the allotment; H = historic, likely extirpated			

Greater sage grouse. Browns Bench, which includes all of the Brackett Bench Allotment, had one of the highest density of sage grouse leks in the Jarbidge area. Sixteen historical

and five active leks were present on or within two miles of the Brackett Bench Allotment. Population numbers were down at all five of the active leks (Table 8). Six of the historic sage grouse leks became inactive following block vegetation treatment projects in the 1960's. Research on sage grouse in this allotment in the early 1990's documented the movement of sage grouse from lower elevations (5200 feet) on Browns Bench to higher elevations (7500 feet) as summer progressed. Sagebrush communities where shrub cover is greater than 10% are used by sage grouse for nesting. Grazing Idaho fescue, Sandberg bluegrass, bottlebrush squirrel-tail and Thurber needlegrass to a 40% use level will not provide the minimum residual cover for sage grouse nesting. A 40% use level or less will likely provide adequate residual for sites dominated by bluebunch wheatgrass. Grass heights in seedings was greater than 10", however, they had not been grazed at the time of the assessments.

Table 8 - Numbers of male sage grouse at leks in or near the Brackett Bench Allotment for which there was data.

Lek #	# Males	Year of Recent Count	High # Males	Year of Count
2T-23	0	2002	8	1965
2T-24	0	1998	10	1965
2T-25	15	2002	46	1951
2T-28	0	2002	49	1961
2T-29	0	2000	10	1951
2T-30	0	2000	9	1951
2T-31	0	2000	6	1951
2T-32	0	2000	13	1951
2T-99	0	2000	21	1982
2T-100	0	2000	10	1982
2T-111	18	2002	25	1998
2T-129	12	2002	17	1998
2T-130	18	2002	31	1998
2T-131	0	2002	42	2000
2T-159	8	2002	13	1998

Columbian sharp-tailed grouse. Radio marked Columbian sharp-tailed grouse were documented using the mountain shrub lands in the southern portion of this allotment.

Mountain quail. Mountain quail were historically present in several canyons in the Browns Bench area including Player Canyon, Brown's Creek, China Creek, and an unnamed canyon behind the Rock House.

Prairie falcon. Prairie falcons have been observed in the cliffs associated with Salmon Falls Creek and Brown's Bench. Several nest sites have been reported in the area.

Peregrine falcon. Peregrine falcons have been observed flying near Salmon Dam during the nesting period. Cliffs in the canyon provide suitable nesting habitat for this species.

Loggerhead shrike. Shrikes have been observed in areas with tall sagebrush (Wyoming big sagebrush). Wild fires have reduced some of the habitat for this species.

Brewer's sparrow and Sage sparrow. Both species have been observed in areas with adequate shrub height for nesting.

Spotted bat. Spotted bats have been observed along Salmon Falls Creek foraging north of the dam. This species was also likely present in the cliffs between China Mountain and the lower plateau.

Townsend big-eared bat. Idaho State University documented Townsend big-eared bats in Salmon Falls Creek Canyon in the late 1970's.

Calliope hummingbird. Calliope hummingbirds have been documented in riparian zones in the adjoining allotment to the west and were likely present in this allotment.

Redband trout. Redband trout have been observed in China Creek (downstream of the water fall) and in Salmon Falls Creek.

Northern leopard frog. Northern leopard frogs had been confirmed in Salmon Falls Creek and the back water of the reservoir historically. An inventory in 1993 did not locate this species.

Western toad. There was no data for western toad in the Brackett Bench Allotment. It was historically present in Salmon Falls Creek and may persist along wetlands associated with Whiskey Slough, Brown's Creek and China Creek.

Columbia spotted frog. The U.S. Fish & Wildlife Service had designated the Great Basin population of Columbian spotted frog as a 'Candidate' species. Spotted frogs have not been documented in this allotment nor had any inventory for this species been conducted. Suitable habitat was present along a portion of China Creek, upstream of the water fall in some old beaver ponds. Whiskey Slough has some ponds that support amphibians.

Lewis woodpecker. This large woodpecker has been found in the high elevations in a small stand of large diameter aspen. Aspen patches with trees greater than 10 inches diameter provide suitable habitat for this species. Aspen stands were often associated with seeps, spring, some east facing slopes, and areas below snow concentrations.

Simpson's hedgehog cactus. Seven locations of this small, barrel cactus have been known to occur in this allotment. It was found primarily on gravelly soils in low sagebrush/Idaho fescue plant communities. Threats to this species were primarily from collection of plants from the wild, but fire, habitat degradation, and trampling from livestock also impact this species.

Slickspot peppergrass. Slickspot peppergrass is not known to occur in this allotment, and only 52 acres of suitable habitat occurs. Threats to this species include degradation of slickspots and surrounding area habitat, trampling from livestock, weed invasion.

C. Guidelines for Grazing Management

The current grazing management plan provides for periodic rest during the critical growth period between the boot stage and flowering. Four of the seven stream reaches in this allotment are functioning-at-risk. Not all water troughs have functional escape ramps for wildlife. Native communities have a high cover of exotic annuals (up to 45 percent) and low cover of biological soil crusts (as low as 1 percent). The fence wire spacing is not to BLM specifications for mule deer, antelope, and bighorn sheep. The top wire is generally too high.

Per the *Idaho Standards for Rangeland Health and Guidelines for Livestock Grazing Management* the following Guidelines need to be implemented to promote significant progress toward the Standards:

Guideline 5 - Maintain or promote grazing management practices that provide sufficient residual vegetation to improve, restore, or maintain healthy riparian-wetland functions and structure for energy dissipation, sediment capture, ground water recharge, streambank stability, and wildlife habitat appropriate to site potential.

Guideline 6 – The development of springs, seeps, or other projects affecting water and associated resources shall be designed to protect the ecological functions, wildlife habitat, and significant cultural and historical/archaeological/paleontological values associated with the water source.

Guideline 12 – Apply grazing management practices and/or facilities that maintain or promote the physical and biological conditions necessary to sustain native plant populations and wildlife habitats in native plant communities.

Guideline 20 – Design management fences to minimize adverse impacts, such as habitat fragmentation, to maintain habitat integrity and connectivity for native plants and animals.

V. Conclusions

All indicators for the applicable Standards for Rangeland Health are not being met at the lower elevation sites in the allotment for Standard 1 (Watershed), Standard 2 (Riparian/Wetlands), Standard 3 (Stream Channel/Floodplain), Standard 4 (Native Plant Communities), Standard 5 (Seedings), and Standard 8 (Special Status Species). All indicators for the applicable Standards are being met at the higher elevation sites in the allotment for Standard 1 (Watershed), Standard 2 (Riparian/Wetlands), Standard 3 (Stream Channel/Floodplain), Standard 4 (Native Plant Communities), Standard 5 (Seedings), and Standard 8 (Special Status Species).

VI. Consultation

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VII. Recommendations

Maintain preference at 2386 AUMs. Manage for light utilization levels (up to 40%) in order to maintain and/or improve the existing native and seeded plant communities. This would Improve and maintain ecological condition in the native communities and allow improvement in the seedings by reducing grazing impacts to watershed features including soils, biological crust, and native plant communities during both above and below normal precipitation years.

Monitor native grass areas reverting to sagebrush to ensure re-establishment of big game habitat and upland game bird nesting and cover habitat. Allow no more than 50% frequency of browsing on current year leaders on key woody species*. Under the forage allocation proposed, a percent of the forage production would be allocated to watershed and wildlife, and would allow the native plant communities to recover, and over the long term provide habitat for wildlife.

Establish riparian standards for use on key riparian herbaceous species, key woody species, and bank alteration for all creeks and wetlands in the allotment.

Plant preferred browse species on crucial antelope winter range in areas previously seeded to crested wheatgrass following wild fire. Preferred browse species to be used may consist of a combination of Wyoming big sagebrush, four-wing saltbush, antelope bitterbrush, and winterfat. Livestock use of browse species will be managed to ensure that palatable browse species are maintained or increased for wildlife on winter range.

Change season of use to remove livestock from identified crucial winter range by mid-November or earlier.

Maintain the vegetation communities or improve them. Add management guidelines for use in aspen stands.

Conduct Ecological Site Inventory of those acres previously determined to be in poor condition to quantify current status. Seed or plant native shrubs, grasses and forbs into poor condition range sites and rest as necessary to ensure establishment. This would result in improvement of poor condition range.

Maintain existing vegetation improvements.

Provide for water in all water troughs even when livestock are not present. All water troughs will have correctly installed and functioning wildlife escape ramps.

No salting in areas with Simpson Hedgehog cactus and within 0.25 miles of Salmon Falls Creek Canyon.

Manage big game habitat to support increased mule deer and antelope populations. Maintain existing upland game bird nesting and cover habitats.

Implement measures for noxious control weed in this allotment.

Construct a protection fence to exclude cattle from Antelope Springs Creek in the Antelope Pasture 1.

*Note: 50% use on key woody species is not allocated to livestock. Use is expected to be low except for during the winter if snow covers herbaceous vegetation. Crucial mule deer and antelope winter range is identified in the allotment.

Appendix I:

Water Temperatures (°C) Summary Report For Upper China Creek

	1998			1999			2000			2001		
	Ave	Ave		Ave	Ave		Ave	Ave		Ave	Ave	
	<u>Ave</u>	<u>Max</u>	<u>Min</u>	<u>Ave</u>	<u>Max</u>	<u>Min</u>	<u>Ave</u>	<u>Max</u>	<u>Min</u>	<u>Ave.</u>	<u>Max</u>	<u>Min</u>
May										11.0	14.9	8.5
June	10.6	13.7	8.5	10.6	13.4	8.6	11.8	15.4	9.4	11.4	14.8	8.9
July	13.4	17.0	11.1	12.1	15.3	9.9	13.0	16.6	10.6	13.3	16.6	11.1
Aug.	13.1	16.7	10.8	12.5	15.3	10.5	13.2	16.6	11.0	13.8	17.1	11.7
Sept.	11.7	14.2	10.1	10.3	13.1	8.2	11.0	14.0	9.0	12.0	14.3	10.4
Oct.				8.6	11.3	6.9	8.8	11.4	7.2	9.5	11.3	8.1

	2002			4-5 Year Aves.		
	Ave	Ave		Ave	Ave	
	<u>Ave</u>	<u>Max</u>	<u>Min</u>	<u>Ave</u>	<u>Max</u>	<u>Min</u>
June	11.0	13.5	9.2	11.1	14.2	8.9
July	12.6	14.9	11.0	12.9	16.1	10.7
Aug.	11.5	13.7	10.0	12.8	15.9	10.8
Sept.	10.7	12.8	9.4	11.1	13.7	9.4
Oct.	8.4	10.5	6.9	8.8	11.1	7.3

China Creek Summary Report for Other Water Quality Attributes

Years	1997	1998	1999	2000	2001	2002	5 year
	<u>Ave.</u>	<u>Ave.</u>	<u>Ave.</u>	<u>Ave.</u>	<u>Ave.</u>	<u>Ave.</u>	<u>Ave.</u>
DO (mg/l)	7.5	6.9	9.2	8.7	8.7	8.5	8.3
%DO	85.8	70.0	87.6	88.3	88.4	86.7	84.5
pH	7.8	7.8	7.7	7.9	8.0	7.9	7.9
Sp. Cond (uS/cm)	93.3	124	64.2	110	84.5	70.7	91.1
TDS (g/l)	.060	.080	.042	.070	.054	.045	.059
Nitrates (mg/l)	.11						n/a
T. Phos. (mg/l)	.17						n/a
F. Coli. (cfu/100ml)	27						n/a
TSS (mg/l)					14		n/a

n/a – not applicable